

INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS CORP. LOCATION

Post Office Box P
OAK RIDGE, TENN.TO Mr. L. L. Forward
LOCATION K-1034 Building

DATE January 24, 1947

ANSWERING LETTER DATE

ATTENTION Mr. L. Lieber
COPY TO Dr. M. J. Costello ✓
Mr. L. G. Bamer
Mr. J. C. Worthington (2)
FileSUBJECT MERCURY IN THE ELECTRONIC
SHOP, K-1024.

Accompanying this letter is a copy of a "Report on Visit to Oak Ridge, Tenn., November 25-26, 1946", by Mr. O. G. Stam, industrial hygienist with the Union Carbide Corporation. The sections which have been copied are those which relate to Building K-1024. For room 13 Mr. Stam has in general two recommendations, the first being that the general ventilation and heating arrangement be modified so as to cause an even flow of air from intakes on the north end toward exhaust fans on south end. It seems to us that this recommendation, if carried out, would help to further reduce the mercury vapor hazard in room 13.

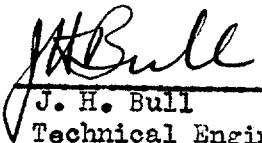
Mr. Stam's second recommendation is that lateral exhaust hoods be installed to exhaust mercury vapors arising from operations which are now performed on the mercury handling table and from the chemical trap preliminary cleaning operations. This recommendation furnishes one means of removing an important part of the source of air contamination. Another means of removing the source of contamination would be to conduct these two types of operations in such a way that no mercury vapor is released. In general the problem is one of housekeeping since mercury in closed containers can not release vapor to the atmosphere. On several visits during the last few months the writer has observed that although housekeeping in mercury handling has been greatly improved, droplets of mercury have almost always been in evidence on the mercury handling table, on the floor around the mercury handling table and around the sink in the southwest corner of room 13. Although the mercury vapor concentration in room 13 has been negligible most of the time during the last few months, on at least three occasions, notably December 16, December 2, and November 18, 1946, air analyses have shown as much as two-tenths and four-tenths milligram of mercury per cubic meter. The problem, therefore, has not been solved and we believe that either Mr. Stam's recommendation for hoods covering these operations or else the aids to housekeeping recommended in our letter of November 14, 1946, or perhaps both sets of recommendations, should be adopted.

The question has recently been raised as to whether the employees in room 13 should be permitted to eat their lunch in that room. The Safety Department has recommended that these employees be provided a suitable place to eat their lunch outside of the mercury contaminated area. Reduction or even elimination of a mercury vapor hazard in room 13 would not make eating in this room safe.


Very small amounts of mercury or mercury contaminated dust if taken into the body with food will cause over a period of years exactly the same harmful effects as very small concentration of mercury vapors breathed over the same period. The maximum amount of mercury which can be ingested daily without causing harmful effects is about one-half milligram. Surface contamination in the room which could lead to the ingestion of this amount would be difficult to detect and much more difficult to control.

Another possible solution to the eating problem would be to set apart a section of room 13, possibly the northwest corner, for eating purposes. If this were done rigorous controls on the movement of mercury contaminated equipment and tools into this area would have to be applied and maintained permanently and analytical checks of the table tops would have to be run on a routine basis. In view of the fact that allowing employees to eat in room 13 would introduce a new hazard and one which would be very difficult to control, the Safety Department suggests that continued efforts be made to provide a satisfactory eating place outside of room 13.

No matter where employees eat their lunch one very important precaution which should be vigorously enforced is that employees should wash their hands thoroughly before eating. It is thought that this point should be strongly emphasized and that a program of education and systematic reminders should be instituted.


J. H. Bull
Technical Engineer
Safety Department

Reviewed by:


C. L. Stewart
Asst. Supervisor
Safety Department

JHB:msm

APPROVAL FOR RELEASE

Document: # Unnumbered document Date _____;
Title/Subject MISCELLANEOUS CORRESPONDENCE RE

MERCURY INFORMATION (1947 - 1970)

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K-25 Classification & Information Control Officer

2/1/93
Date

REPORT ON VISIT TO OAK RIDGE, TENN, NOV. 25-26, 1946

The Instrument Laboratory 1024.

Room 13:

This room is roughly 75 x 125 feet. It is heated by unit heaters set at ceiling level and blowing air downward on an angle. The net effect is the same as if 3 out-board motors were mounted and run with their propellers in a barrel of water. In other words, a churning of the air. This produces air movement but no air change. This equalizes a recirculation of mercury contaminated air. In the windowed end of this room is a large propeller exhaust fan which is mounted in a window opening. Adjacent to the fan, merely 3 feet away, is an opening window which was open. The air swept in through this window traveling 5 feet and then out through the fan. This merry-go-round effect contributes nothing to general room air ventilation.

There are a few processes which are bound to vaporize mercury and should be done under a hood. Two locations are the sink and the drainage table on the opposite side of the room. Such hoods need not be of the traditional laboratory type, which is none too efficient in air-flow design and is expensive. Since both locations are in front of windows, a simple box hood of metal or masonite enclosing the operating area on sides and top with a good propeller fan set in its back wall will serve the purpose. However, some means of air inlet must be provided for the room if the exhaust fans are to operate efficiently and such incoming air must be heated in cold weather. It is cheaper and more efficient to allow air to enter and be heated at one central location than to draw it in through cracks at high resistance and try to heat it afterward. It is of course axiomatic that whatever amount of air is withdrawn from the room must be replaced by inflow at an equal rate. It is equally important that such make-up air enter at the opposite end of the room from the exhaust points. This provides constant horizontal and unidirectional low velocity air flow to keep the room swept clear of contamination.

A fairly simple method would be to install a bank of the unit heaters in front of an air inlet in the ceiling immediately outside the long wall of room 14. There are so many unit heaters churning the room that removing a few and straightening out the flow would aid greatly. Once such unilateral general air movement is established small momentary operations such as unsoldering need not cause any more worry than if conducted out-of-doors as no buildup accumulation of mercury vapor can occur in a constantly replenished moving air stream. In the summer time the steam can be shut off and it will then aid in removing heat and evaporated moisture.

Room 14, Instrument Laboratory 1024.

This is a long narrow room about 8 x 35 feet with chemical laboratory type exhaust hoods along one long side wall. Acids are handled in the sink trough beneath the hood. The basic idea is standard procedure, but the fact is that the air sweeps in at the top of the hood and the acid vapor rolls around in the bottom of the hood and has to move up through the breathing zone level of the operator before being exhausted. That is a little too late to capture and exhaust it. The proper air flow should be in past the operator almost horizontally across the vapor level to the rear wall and then up into the exhaust system. This hood can be greatly improved by cutting a piece of composition board to the full length of the hood and about 24" to 36" wide. This baffle or plate should be suspended from the front upper inside edge of the hood and sloping towards the back wall where it should form a slot opening with the back wall.

The center of exhaust or suction is thus lowered and carried back into the hood to provide front to back air flow with uniform face velocity distribution. In regard to the air requirement to provide make-up air to supplant the air exhausted by this large hood, the air inlet is located in the door to room 13. This places quite a drain on the air of room 13 and will pull up enough negative pressure to hamper propeller exhaust fans in the outside walls of room 13. It will also produce strong cold drafts in room 13 if a window is opened there.

Room 14, which due to its small dimensions for all practical purposes is an exhaust booth, should have an independent fresh air supply. The air supply inlet with a few unit heaters mounted in it could be set in the upper window and deflect incoming high velocity air towards the ceiling so as not to disturb the hood air flow or annoy the operator. The present emergency exhaust propeller fan in the upper window, could be moved to the lower window where it would be more effective in emergency clearing of injurious vapor from the breathing zone since these vapors are as heavy as air or heavier. A broken acid container on the floor would require a low sweep of ventilation from the open door to the window fan. Most breakage will occur on or stream toward the floor.

The above changes do not involve any great outlay or complicated engineering. Smoke tests confirmed the above need for hood improvement.

O. C. Stam
Industrial Hygienist

December 20, 1946

MERCURY USAGE AT THE ORGDP
1968 THROUGH 1ST QUARTER 1970

There was no mercury purchased during this period. The ORGDP has sufficient mercury in stock to meet its requirements. Used (dirty or contaminated) mercury is reclaimed through a controlled recovery process (triple distillation) and reissued as requested.

The ORGDP was contracted to recover approximately 1000 pounds of mercury from mercury batteries by a private company during the period.

The following table shows the mercury used and processed by the ORGDP during this period:

| <u>Code*</u> | <u>Quantity/lb.</u> | <u>1968</u> <u>Month-Day</u> | <u>Account</u> |
|---------------------------|---------------------|---------------------------------|----------------|
| 12 | 8 | 1-17 | 1340 |
| 12 | 8 | 1-17 | 1340 |
| 12 | 80 | 1-24 | 2647 (Y-12) |
| 12 | 48 | 2-5 | 1571 |
| 07 | 32 | 2-8 | M.T. |
| 12 | 8 | 2-9 | 1340 |
| 01 | 0 | 2-13 | 1582 |
| 12 | 80 | 2-20 | 2647 (Y-12) |
| 12 | 8 | 2-23 | 1340 |
| 12 | 48 | 3-4 | 1572 |
| 12 | 48 | 3-15 | 1572 |
| 12 | 32 | 3-19 | 1272 |
| 12 | 40 | 3-25 | 1340 |
| No Record for April, 1968 | | | |
| 12 | 17 | 5-3 | 1572 |
| 12 | 8 | 5-7 | 1730 |
| 12 | 8 | 5-8 | 1239 |
| 12 | 48 | 5-13 | 1572 |
| 12 | 64 | 5-14 | 1572 |
| 12 | 8 | 5-16 | 1340 |
| 12 | 110 | 5-22 | 2648 (Y-12) |
| 12 | 8 | 6-4 | 1340 |
| 12 | 48 | 6-6 | 2647 (Y-12) |
| 12 | 16 | 6-10 | 1340 |
| 12 | 96 | 6-17 | 1340 |
| 12 | 8 | 6-21 | 1340 |
| 12 | 40 | 6-21 | 1572 |
| 12 | 16 | 6-25 | 1340 |
| 12 | 48 | 6-26 | 2647 (Y-12) |
| 12 | 48 | 7-1 | 1572 |
| 12 | 57 | 7-8 | 2378 (Y-12) |
| 12 | 32 | 7-15 | 1340 |
| 12 | 64 | 7-17 | 1572 |
| 25 | 102 | --- Inventory --- | |
| 12 | 48 | 7-24 | 2378 (Y-12) |
| 06 | 200 | 7-26 | 1566 |
| 07 | 48 | 8-1 | M.T. |
| 06 | 304 | 8-7 | 1565 |
| 12 | 80 | 8-12 | 2378 (Y-12) |
| 01 | 205 | 8-15 | 1582 |

| <u>Code*</u> | <u>Quantity/lb.</u> | 1968 <u>Month-Day</u> | <u>Account</u> |
|--------------|---------------------|--------------------------|----------------|
| 12 | 64 | 9-30 | 1572 |
| 01 | 187 | 9-15 | 1582 |
| 01 | 392 | 9-9 | 1582 |
| 01 | 480 | 9-10 | 1582 |
| 12 | 8 | 9-18 | 1340 |
| 12 | 8 | 10-27 | 1340 |
| 12 | 8 | 10-23 | 1015 |
| 12 | 8 | 10-25 | 1015 |
| 12 | 8 | 11-8 | 1075 |
| 01 | 936 | 11-8 | --- |
| 01 | 216 | 12-11 | --- |
| 07 | 192 | 12-11 | M.T. |
| 12 | 40 | 12-13 | 1323 |
| 12 | 32 | 12-17 | 1726 |
| 12 | 8 | 12-20 | 1075 |

| <u>Code*</u> | <u>Quantity/lb.</u> | 1969 <u>Month-Day</u> | <u>Account</u> |
|--------------|---------------------|--------------------------|----------------|
| 12 | 64 | 1-3 | 1324 |
| 12 | 16 | 1-3 | 1075 |
| 01 | 0 | 1-10 | --- |
| 12 | 48 | 1-10 | 1323 |
| 12 | 8 | 1-14 | 1075 |
| 12 | 16 | 1-23 | 1075 |
| 12 | 64 | 2-11 | 1325 |
| 12 | 48 | 2-13 | 1323 |
| 12 | 16 | 3-10 | 1075 |
| 01 | 0 | 3-12 | --- |
| 12 | 48 | 3-19 | 1075 |
| 07 | 40 | 3-21 | M.T. |
| 12 | 32 | 4-28 | 1075 |
| 12 | 32 | 5-1 | 1075 |
| 12 | 48 | 6-10 | 1323 |
| 12 | 64 | 6-16 | 1324 |
| 12 | 48 | 6-18 | 1325 |
| 01 | 0 | 7-15 | --- |
| 12 | 8 | 7-29 | 1015 |
| 12 | 8 | 8-8 | 1075 |
| 06 | 8 | 8-8 | --- |
| 01 | 255 | --- | --- |
| 12 | 8 | 9-3 | 1340 |
| 12 | 8 | 9-4 | 1075 |
| 01 | 0 | 9-15 | --- |
| 12 | 5 | 9-18 | 1015 |
| 12 | 64 | 9-24 | 1324 |
| 12 | 5 | 10-6 | 1077 |
| 12 | 10 | 10-16 | 1015 |
| 12 | 8 | 10-22 | 1075 |
| 12 | 15 | 10-30 | 1015 |
| 12 | 10 | 11-11 | 1015 |
| 12 | 48 | 11-11 | 1323 |

| <u>Code*</u> | <u>Quantity/lb.</u> | 1969 <u>Month-Day</u> | <u>Account</u> |
|--------------|---------------------|--------------------------|----------------|
| 12 | 10 | 11-14 | 1325 |
| 12 | 60 | 11-17 | 1324 |
| 12 | 8 | 11-18 | 1075 |
| 01 | 0 | 11-19 | --- |
| 12 | 32 | 11-21 | 1075 |
| 12 | 10 | 11-24 | 1015 |
| 12 | 10 | 12-4 | 1015 |
| 01 | 0 | 12-10 | --- |
| 12 | 10 | 12-11 | 1025 |

| <u>Code*</u> | <u>Quantity/lb.</u> | 1970 <u>Month-Day</u> | <u>Account</u> |
|--------------|---------------------|-----------------------------|----------------|
| 12 | 5 | 1-14 | 1075 |
| 12 | 8 | 1-14 | 1075 |
| 24 | 0 | -Inventory January 15, 1970 | |
| 25 | 0 | -Inventory January 20, 1970 | |
| 12 | 64 | 1-26 | 1325 |
| 12 | 8 | 1-29 | 1075 |
| 12 | 8 | 2-9 | 1340 |
| 12 | 8 | 2-13 | 1002 |
| 12 | 8 | 2-20 | 1015 |
| 12 | 8 | 3-6 | 1075 |
| 01 | 260 | 3-12 | --- |

*Code:

- 01 - Mercury received for processing
- 06 - Transfer - miscellaneous service and materials
- 07 - Material transferred to Paducah
- 12 - Issue of reclaimed mercury

Herb

11/25/70

INTER - COMPANY CORRESPONDENCE

Insert

| | | | | |
|-------|---|--|----------|---|
| Name) | COMPANY | Carbide and Carbon Chemicals Corporation | LOCATION | Post Office Box P Oak Ridge, Tennessee |
| TO | Mr. B. Speyers Mr. J. P. Murray Mr. S. Cromer Dr. F. W. Hurd Dr. C. K. Beck | | DATE | October 13, 1948 |
| | | | SUBJECT | Device for the Removal of Mercury Vapor from the Exhaust of Vacuum Cleaners |

104.8

Clean up of mercury spills in the Plant Areas in the past was accomplished by using standard type vacuum cleaners. Analysis made of the exhaust stream from cleaners used in this service revealed over tolerance values of mercury vapor.

Tests to determine a suitable filter to minimize such conditions of contamination were initiated. Report No. K-272, "A Device for the Removal of Mercury Vapor from the Exhaust of Vacuum Cleaners" - W. D. Cline and J. A. Westbrook, dated September 20, 1948, summarizes test data and design specifications for the fabrication of a filter for use with the standard tank type vacuum cleaners.

The above report was reviewed by the Central Safety Committee and the use of such filters recommended in connection with the clean up of mercury spills. One filter has been fabricated and is presently being used by the Instrument Department. Results obtained after six (6) hours of intermittent use are highly satisfactory.

It is recommended that vacuum cleaners used for such service in other Plant Areas be equipped with the new filters. Details of filter design are listed in the report, and the necessary filter material may be obtained from Mr. W. D. Cline, Building K-1004-A.

A. P. Dunlap
A. P. Dunlap, Superintendent
Safety and Inspection Division

WLR:AFB:mrh

cc: Mr. R. A. Walker
Mr. R. M. Williams
Mr. R. A. Wiswall
Mr. K. W. Bahler
Mr. G. T. E. Sheldon
Mr. W. D. Cline
Dr. J. S. Lyon
Mr. A. F. Becher
Mr. W. L. Richardson

INTER-COMPANY CORRESPONDENCE

(INSERT
NAME)COMPANY CARBIDE AND CARBON CHEMICALS CORP. LOCATION Post Office Box P
OAK RIDGE, TENN.To M. J. Costello, M.D. (2)
LOCATION K-1003

DATE October 23, 1947 1048

ANSWERING LETTER DATE October 17, 1947

ATTENTION

COPY TO N. H. Ketcham
FileSUBJECT Air Analyses for Mercury,
Building K-1024

As requested, copies of Service Report HA-1108,
showing the results of air analyses following a mercury
spill in Building K-1024 during the preceding night or
early morning of June 13, 1947, are attached.

Frank W. Hurd
Frank W. Hurd

FWH:NHK:ae

*Copies forwarded
to Insurance Dept. 10/27
L.*

INTER-COMPANY CORRESPONDENCE

(INSERT
NAME)

COMPANY CARBIDE AND CARBON CHEMICALS CORP. LOCATION

Post Office Box P
OAK RIDGE, TENN.

TO M.J. Costello, M.D. Ketcham
LOCATION Dispensary, al Hygiene Section
ATTENTION Dr. Costello
COPY TO file

DATE 6-27-47, 1947

ANSWERING LETTER DATE

SUBJECT PRICE, William Link
Medical No. 23515
Accident: 6-13-47
Reported: 6-19-47

*Done for
awhile*

*Fred for
Dr. Costello*

Dear Mr. Ketcham:

referred to and bill of mercury on June 13, 1947, A. E. C.
Dear Dr. Costello: as of analysis report, showing the readings for
mercury in building 1027, room 10.

In connection with the above captioned matter, will
you kindly supply us with copies of the analysis report showing the
readings for mercury, room 10 Bldg. 1027. *(1027)*

Thanking you for your kind cooperation, I am,

Very truly yours, M. J. Costello, M. D.
Director, Medical Dept.

C.O. Burns
C.O. Burns
Insurance and Compensation Dept.

A.H. Ketcham
Ins. Hygiene Sect.
K1704D

9 P.E. of E n 6-13-47

COB/dv

INTER-COMPANY CORRESPONDENCE

COMPANY CARBIDE AND CARBON CHEMICALS CORP. LOCATION OAK RIDGE, TENN.

Post Office Box P
OAK RIDGE, TENN.

Mr. N. H. Ketcham
Industrial Hygiene Section
K-1004-D

October 17, 1947

DATE 6-27-47

ANSWERING LETTER DATE

Mercury Analysis

SUBJECT PRICE, William Link

Medical No. 23515

Accident: 6-13-47

Reported: 6-19-47

ATTENTION Dr. Costello
COPY TO file

Dear Mr. Ketcham:

With regard to alleged spill of mercury on June 13, 1947, A. E. C. has requested copies of analysis report, showing the readings for mercury in building 1027, room 10.

Will you kindly supply this office with the above readings. Your prompt attention to this matter will be greatly appreciated.

You kindly supply us with copies of the analysis report showing the readings for mercury, room 10 Bldg. 1027. Yours very truly,

Thanking you for your kind cooperation, I am,

M. J. Costello, M. D.

Very truly your Director, Medical Dept.

MJC/mkp

C.O. Burns

Insurance and Compensation Dept.

WJA/dv

INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS CORP. LOCATION Post Office Box P
OAK RIDGE, TENN.To Dr. M. J. Costello ✓
LOCATION K-1003

DATE July 7, 1947

ATTENTION

ANSWERING LETTER DATE

COPY TO Mr. L. G. Bamer, K-1005
Dr. F. W. Hurd, K-1004-A
Mr. R. M. Williams, K-1034
FileSUBJECT Mercury Contamination of Room 10,
Building K-1024

Dear Dr. Costello:

The air analyses for mercury vapor made in the K-1024 building on June 13, 16, 17, and 25, 1947 and reported in Industrial Hygiene Section reports HA-1108, HA-1109, HA-1114, and HA-1116, respectively, are attached.

Notification of the accident was telephoned to this office by Mr. W. T. Allman, supervisor of the shop, immediately after 8:00 A.M. June 13, 1947. The first analysis was made at 8:25 A.M. at the door-nob hole in the door to room 10. The result of 3.2 mg Hg / cu meter was considered evidence of serious contamination within the room and accordingly Mr. L. G. Bamer, Safety Department Supervisor, was notified immediately by telephone. Subsequent decontamination activities were initiated by the Safety Department.

Starting at 8:35 A.M. a series of air analyses were made in work and office areas adjacent to room 10, establishing that the mercury vapor was being effectively confined in room 10.

At 11:05 A.M. the air being supplied to the decontamination personnel was checked and found free of mercury vapor. Decontamination work proceeded and air analyses in room 10 at 3:00 P.M. and 3:10 P.M. showed effective reduction of the mercury concentration in the atmosphere.

Decontamination and air sampling were continued during the day of June 16, 1947. Air sampling continued June 17, 1947 and showed some residual mercury still present in room 10, but in such small quantity that operation of an exhaust fan brought the concentration below the generally accepted maximum allowable concentration of 0.1 mg Hg / cu meter. A subsequent analysis on June 25, 1947 confirmed that no significant contamination remained.

Dr. M. J. Costello
page 2

The three determinations marked with an asterisk were made by chemical analysis after the method of Polejaeff. All other results were obtained with a General Electric Company Vapor Detector calibrated for mercury.

Very truly yours,

N. H. Ketcham

N. H. Ketcham
Industrial Hygiene Section
Works Laboratory

Frank W. Hurd

Frank W. Hurd

NHK:ae

Report No. HA-1108

| <u>Date</u> | <u>Time</u> | <u>Sampling Position</u> | <u>Result</u> (Mg. Hg / cu meter) |
|-------------|-------------|---|--------------------------------------|
| 6-13-47 | 8:25 A.M. | At a hole in the north door to room #10: | 3.2 |
| | 8:35 A.M. | At a window midway of room #4 as an electric fan was blowing air from a window in room #10 towards room #4: | 0.00 |
| | 8:39 A.M. | By open office window in room #4 across from the open window at room #10: | 0.00 |
| | 8:45 A.M. | At open window in room #9 adjacent to open window at room #10: | 0.00 |
| | 8:48 A.M. | Face level in hallway outside room #10: | 0.12 |
| | 9:15 A.M. | Probe was held near a metal cylinder that had been brought out of room 10 near the mercury break: | 0.12 |
| | 9:20 A.M. | At a hole in the north door to room #10: | 1.22 |
| | 9:25 A.M. | 3 inches above floor, 6 feet from the entrance to room #11 in room #13: | 0.14 |
| | 9:27 A.M. | Atop work bench in room #13, 6 feet from door to room #11: | 0.00 |
| | 11:05 A.M. | In hallway 16 feet from room #10 at intake to combination hose mask pump which was supplying air to decontamination workers in room 10: | 0.00 |
| | 3:00 P.M. | Face level, south end of room #10: | 0.12 |
| | 3:05 P.M. | Face level, room 11: | 0.00 |
| | 3:10 P.M. | Face level, north end of room #10: | 0.4 |

Report No. HA-1109

| | | | |
|---------|-----------|--|------|
| 6-16-47 | 8:30 A.M. | Face level, north end of room #10: | 0.10 |
| | | At the floor level in the same position: | 0.14 |
| | 8:45 A.M. | Face level, center of room #11: | 0.00 |
| | | At the floor level: | 0.02 |
| | 9:00 A.M. | Face level, room #10: | 0.11 |
| | | Floor level, room #10: | 1.21 |

Report No. HA-1109 (cont'd)

| <u>Date</u> | <u>Time</u> | <u>Sampling Position</u> | <u>Result</u> (Mg. Hg / cu meter) |
|-------------|-------------|--|--------------------------------------|
| 6-16-47 | 9:20 A.M. | Room 10: Inside the oven while it was on: | 1.21 |
| | | Room 10: 6 feet from the closed oven door: | 0.21 |
| | | Room 10: At the floor near the oven: | 1.21 |
| | 9:30 A.M. | Center of room #10: | 0.11 |
| | 3:00 P.M. | Face level, north end of room #10: | 0.05 |
| | | Face level, south end of room #10: | 0.04 |
| | | At floor level, south end of room #10: | 1.21 |
| | 3:15 P.M. | Face level, south end of room #10: | 0.00 |
| | | Face level, in hall outside room #10: | 0.00 |

Report No. HA-1114

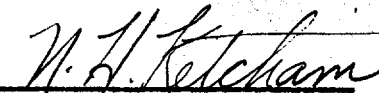
| | | | |
|---------|-----------|------------------------------------|-------|
| 6-17-47 | 9:01 A.M. | Face level, north end of room #10: | 0.4 * |
| | | Face level, north end of room #10: | 0.21 |

(Exhaust fan in room #10 turned on at 9:08 A.M.)

| | | |
|-----------|------------------------------------|--------|
| 9:14 A.M. | Face level, north end of room #10: | <0.1 * |
| | Face level, north end of room #10: | 0.05 |
| 9:26 A.M. | Face level, center of room #11: | 0.1 * |
| | Face level, center of room #11: | 0.10 |
| 9:30 A.M. | Face level, center of room #11: | 0.00 |

Report No. HA-1116

| | | |
|---------|---------------------------------|------|
| 6-25-47 | Face level, aisle #2, room #13: | 0.00 |
| | Face level, aisle #3, room #13: | 0.00 |
| | Face level, room #10: | 0.00 |


N. H. Ketcham
Industrial Hygiene Section
Works Laboratory

INTER-COMPANY CORRESPONDENCE

(INSERT
NAME)

COMPANY CARBIDE AND CARBON CHEMICALS CORP. LOCATION

Post Office Box P
OAK RIDGE, TENN.

TO **Mr. L. L. Forward, Superintendent**
LOCATION **Instrument Division**

DATE **November 14, 1946**

ATTENTION

COPY TO **Mr. T. E. Lane**
Mr. L. G. Bawer
Dr. M. J. Costello
Mr. H. H. Ketchum
File (2)

ANSWERING LETTER DATE

SUBJECT **Meeting on Mercury Vapor**
in K-1024

This letter is to confirm the conclusions reached at a meeting on November 12, 1946, attended by Messrs. L. Leibler and W. T. Allman of the Instrument Division; H. H. Ketchum of the Works Laboratory, Industrial Hygiene Section; Dr. M. J. Costello of the Medical Department; and J. H. Bull of the Safety Department. The purpose of the meeting was to survey progress made in reducing the mercury vapor hazard in Room 13, Electronics Shop, Building K-1024, and to recommend further steps to alleviate this hazard.

The mercury vapor concentration has been gradually reduced during the last nine months to the point where a chronic hazard no longer exists. This improvement is due chiefly to greatly improved housekeeping in the mercury handling operations and to improved general ventilation in this room. In addition, the chemical trap unplugging operation has been modified so that it no longer causes the release of mercury vapor into the room atmosphere.

Continued vigilance with regard to housekeeping should continue to give a low, safe concentration of mercury vapor in this room, and in order to facilitate good housekeeping it was agreed by the group that:

1. A new mercury handling table should be built with a smooth top sloping to a collection well and a ledge around the top with rounded corners so that no crevices will be present to catch mercury. This table should be built with no shelves or drawers below the top and should be slightly larger than the present table.
2. The mercury handling table should be located in a clearly marked-off area and no other equipment, materials, or operations should be located in this area.
3. The floor in the mercury handling area should be painted white and a rounded concrete curb should be built around it. This curb will serve to mark the area off clearly from the rest of the room and will also prevent, to some extent, the spread of spilled mercury beyond its confines.

Mr. L. L. Forward, Superintendent
Instrument Division

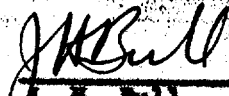
- 2 -

November 14, 1946

The method of unplugging chemical traps which is now in use is satisfactory, but it was agreed that in cool weather it would be desirable to have a vent pipe or stack through which the traps could be blown to the outside atmosphere rather than to carry the traps outside or to blow them through an open window, as is the present practice.

It was agreed that the construction of a hood or other means of auxiliary ventilation for the mercury handling or the chemical trap unplugging operation does seem desirable at present, but that the entire situation with regard to ventilation in the Electronic Shop should be referred to Mr. Stan, Industrial Hygiene Engineer, associated with Dr. A. G. Cranch, for his recommendations.

It was agreed also that the Works Laboratory, Industrial Hygiene Section, will continue to make periodic checks of the mercury vapor concentration in the atmosphere of the Electronic Shop.


J. H. Bull
Technical Engineer
Safety Department

JHB:nh

APPROVED:


Supervisor
Safety Department

AK INTER-COMPANY CORRESPONDENCE

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS CORP. LOCATION

Post Office Box P
OAK RIDGE, TENN.

TO Mr. L. L. Forward
LOCATION

DATE January 28, 1946

ANSWERING LETTER DATE

ATTENTION

COPY TO Dr. A. G. Kammer
Mr. H. F. Priest
File (4)

SUBJECT

As a result of a survey of the concentration of mercury vapor in the air in the Electronic Shop in Building K-1024 made by the Industrial Hygiene group from Laboratory "D", the Safety Department recommends that the following action be taken immediately.

- 1) That the entire floor of the Electronic Shop, the Machine Shop, Office, Cleaning Room, and Leak Calibration Room be thoroughly vacuum-cleaned and then scrubbed with a solution of six ounces of tri-sodium phosphate per pail of warm water. This scrubbing should be done with bristle brushes, and the persons who handle it should wear neoprene gloves. The floor should then be rinsed with clear water.
- 2) That these floors, when dry, be sealed with a solution of one gallon of 42° Be sodium silicate to four gallons of warm water. This solution can be either mopped or brushed on. The floor cannot be walked on until it is thoroughly dry. This will take about twelve hours.
- 3) That all operations involving handling mercury be transferred to the cleaning room where the operation will be performed over the sink. Only a small number of selected individuals should do all the mercury handling.
- 4) That this group of mercury handlers be provided with suitable funnels, pitchers, catch-pans, etc. that will allow them to handle mercury with a minimum of spillage.
- 5) That the practice of immediately and thoroughly cleaning up all mercury spills, no matter how small, be instituted at once.
- 6) That all persons who handle mercury be instructed to wash their hands and faces thoroughly before eating and before leaving the plant at the end of their work period.
- 7) That the practice of unplugging chemical trap connections by the application of heat be discontinued until a suitable hood can be made available.

Mr. L. L. Forward

January 28, 1946

- 8) That all traps in the floor drains and traps in sinks in which mercury has been handled be cleaned up, and that a schedule be set up for periodic cleaning of these traps.

J. H. Bull

J. H. Bull
Technical Engineer

Approved: *Claude L. Stewart*

Claude L. Stewart
Chief Safety Engineer

JHB:hjs

INTER-COMPANY CORRESPONDENCE

INSERT
NAME

COMPANY CARBIDE AND CARBON CHEMICALS CORP. LOCATION

Post Office Box P
OAK RIDGE, TENN.

TO
LOCATION

Mr. E. B. Olszewski
K-1004-D

DATE February 16, 1948

ANSWERING LETTER DATE

ATTENTION
COPY TO

✓ M. J. Costello, M. D., K-1003
R. A. Walker, K-1037

SUBJECT Building K-1037

104.8

Arrangements are currently being made with Mr. R. A. Walker to schedule an air sampling program in certain restricted areas within the K-1037 Building. In anticipation of this work, it will be appreciated if arrangements are made by the Works Laboratory to obtain the necessary security approval to have the required laboratory personnel enter these restricted areas. It is understood that the request for security approval should be directed to the Plant Protection Division with a copy to Mr. R. A. Walker.

N. H. Ketcham

N. H. Ketcham
Industrial Hygienist
Medical Department

NHK:shp

*Samuel
7/2/48*